



**Chartered Institution of Highways & Transportation response to the National Infrastructure Commission (NIC) - National Infrastructure Assessment call for evidence
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CIHT is a charity, learned society and membership body with over 14,000 members spread across 12 UK regions and a number of international groups. We represent and qualify professionals who plan, design, build, manage and operate transport and infrastructure networks. Part of our vision is to demonstrate transport infrastructure's contribution to a prosperous economy and a healthy and inclusive society. Our values are to be Professional, Inclusive, Collaborative and Progressive.

CIHT welcomes the opportunity to respond to the National Infrastructure Commission call for evidence on the National Infrastructure Assessment. CIHT has supported the National Infrastructure Commission's role in advising the Government on the identification of the UK's long-term infrastructure needs.

CIHT call for National Transport Strategy

CIHT has consistently called for an integrated national transport strategy¹ that sets a clear framework of requirements over a sustained period (20-30 years) for all elements of the UK transportation networks. This strategy should include the strategic and local road networks, rail, aviation and ports and set out how those networks integrate with one another. A strategy that addresses walking, cycling and public transport issues in the context of integration of planning, transport, health and well-being.

There should be a clear strategy, set nationally, for collaboration between different policy areas, including transport, digital, health, planning (including housing), utilities, education and social care in making inclusive and accessible environments, as all of these areas contribute to congested networks.

There have been a number of constraints for a long period of time preventing a co-ordinated, successful approach to the assessment and delivery of infrastructure need. These include:

- A continuing lack of commitment to long-term forward planning.
- Limited, if any coordination between government departments with ambiguity around roles and responsibilities. CIHT welcome the recent Industrial Strategy Green Paper and Airport Capacity National Policy Statement and Housing White Paper, however it is essential that these relate/co-ordinate with each other and are not once again individual silo'd statements.
- A reduction in client capability in the delivery of major programmes, a skills shortage in the supply chain combined with a lack of diversity and younger people being attracted into infrastructure planning and construction.
- The framework needs to be stable and simplified wherever possible. It will also have to recognise that need may be uncertain and subject to change and therefore the framework will need the ability to be flexible. This is discussed in the CIHT [FUTURES](#) report.

Other constraints include: resource availability, including finance, technical skills and land availability; local land use planning; lack of recognition of the importance of existing infrastructure maintenance and whole life management; and a lack of money, especially revenue, compared with capital.

¹ [CIHT Manifesto](#)



Supporting long-term economic growth in cities and regions

CIHT asked its regions to highlight the highest value infrastructure investments that would support long term growth in their region. Examples of these can be found in Annex A at the end of this submission.

Improved connectivity across all regions is essential to support and attract businesses and skilled workers, helping regions realise their economic potential and move towards a more balanced economy. With regards to the forms of governance which would most effectively deliver transformative infrastructure, CIHT support the devolution of powers. The overriding aim of devolution should be to ensure infrastructure provision meets the needs of all users, from a personal and business perspective. However the full benefit can only be realised if there is successful connectivity, policy and collaboration between all the cities, regions and LEPs. This requires a transparent share on funding and infrastructure.

There is an opportunity to build on the emergence of sub-national groupings to encourage a more strategic focus to decision making. The emergence of statutory Sub-national Transport Bodies offers new opportunities to feed local 'strategic' views into a wider national 'strategic' view of infrastructure. The National Infrastructure Assessment should take advantage of this by working closely with sub-national partnership bodies enabling an integrated/co-ordinated approach to infrastructure planning to meet local 'strategic needs'.

Further points include:

- Devolved governments in both Scotland and Wales have already demonstrated a more joined up approach in developing transport strategy. There is an opportunity to learn from their approach.
- London provides an example of how a mayoral approach, with executive powers, can deliver positive change in terms of transport. The 1999 Greater London Act transferred responsibility for multi-year budgets to the London Mayor² - which has allowed for long term planning (for schemes such as Crossrail) and for focus on local networks that help improve health and wellbeing through the support given to walking and cycling.
- The devolution deals currently underway present great opportunities for a greater response to local needs but the large number of transport authorities, with different delivery methods and procedures across the UK, does present challenges in terms of consistency of approach, ineffective use of resources and differing governance standards.
- The move to devolution of greater agglomeration of transport operations, if structured (through governance/executive powers and funded for multi-year periods) correctly could deliver real benefits.

Total Transport Pilots

Total Transport³: CIHT are currently working with Northamptonshire County Council and other organisations in their DfT support pilot, which is exploring bringing together transport provision across a range of sectors, education, NHS, the County Council and bus provider. This pilot project has potentially significant benefits in reducing the amount of trips made by transport providers, reducing both cost and congestion. The NIC should consider the success of these pilots in their assessment.

- More focus needs to be given on how we manage transport in all its forms across the country. The Rees Jeffrey Road Fund work on the Major Road network, combined with

² ['Can Devolved Transport Overcome the Black Spots, Guardian Newspaper \(2015\)](#)

³ <https://www.gov.uk/government/publications/total-transport-pilot-fund>



the developing approach of Highways England and the emergence of Sub-National Transport Bodies such as Transport for the North, Midlands Connect and England's Economic Heartland give the opportunity to consider carefully how strategic transport planning and delivery can be managed and delivered with other infrastructure areas.

- The availability of funding for transport, especially at a local level and for ongoing resilience and operation, will continue to be a concern moving forwards.

Planning and housing

A strong spatial strategy and attention to planning

CIHT believes that an infrastructure strategy (including digital infrastructure), linked to a high-level spatial strategy is essential when carrying out the Infrastructure Assessment. There needs to be an integrated approach from Government (national, sub-national and local) and its agencies. This should extend beyond the electoral cycle to produce a long-term spatial strategy that links the future transport needs of the country.

CIHT's response to the National Planning Policy Framework⁴ highlighted the importance of effectively integrating planning and transport to ensure that the objective of delivering sustainable growth is realised. There is a need for changes to the National Planning Policy Framework in order to facilitate better/improved and timely delivery.

Questions such as how future housing requirements will be met must be clear in spatial terms. The Commission should recognise the challenges provided by the operation of the current housing market: the majority of housing availability sits within the current housing stock and locational choices are a trade-off between affordability and travel costs for households. This gives support to an argument for why a light touch spatial strategy is important (for example the devolved administrations have been preparing light touch spatial strategies)⁵.

Infrastructure provision should consider the interaction between transport, digital, health and housing when developing the case for new transport schemes in the UK. CIHT notes that in recent times, the funders, professional advisers and users have tended to focus only on the direct economic benefits, without factoring in quantified health and wellbeing savings.

For example the current aim of an extra 1 million homes in this parliament, alongside provision of social infrastructure to support this extra provision will rely fundamentally on integrating spatial and transport planning. The aims of productivity and automatic planning permission for brownfield sites runs the risk of not fully considering how such schemes integrate with transport provision. This could miss opportunities for ensuring adequate public transport and particularly walking and cycling: important given the health challenges the UK faces.

The NIC should also consider when addressing the Infrastructure Assessment which existing corridors demand investment (particularly regarding public transport, including bus provision with walking and cycling).

Creating more inclusive environments

In order to create inclusive environments CIHT believes that there is a need for a strategy that sets street design in the overall context of the statutory requirements on local authorities (set out in the Equalities Act 2010) to create inclusive environments. This approach is set

⁴ [CIHT response to the National Planning Policy Framework](#)

⁵ [CIHT response to the Transport Select Committee call for Evidence on Local Decision Making on Transport Expenditure.](#)



out in *Manual for Streets*⁶ about the need to place inclusive design at the heart of the design of better streets. Roads and streets are more than just routes for transport. They are about place as well as movement, creating places that people and goods can move to, from and within. Providing accessibility through travel choice is an essential component of place making, i.e. sustainable transport and development location. Accessibility should be assessed and encouraged on the basis of a hierarchy – reducing the need to travel, walking, cycling, public transport, private car - with priority given to the most sustainable means of travel first.

Demand Management, travel patterns and mobility as a service

It is important when assessing the national needs that the process recognises the wider benefits of (transport) infrastructure. Improved and integrated infrastructure will help tackle some of the big societal changes, including the ageing population, rise in obesity and social exclusion that we face. The benefits of investing in a long-term infrastructure plan will have a positive impact on accessibility, education, protecting the environment and enhancing the quality and functionality of existing places as well as improvement in quality of life and climate change.

There is a generational dimension with the priorities of younger people (significantly in major urban environments) likely to change demand for transport in the future. This is partly being driven by technology enabled by innovation and this is encouraging a shift from ownership of transport towards access to transport/connectivity: this is a fundamental shift in terms of attitude and expectations.

The NIC would be encouraged by CIHT to move away from a 'predict and provide' approach to one of more 'decide and provide'. When considering the Infrastructure Assessment, consideration should also be given to what society wants the future to look like. CIHT would be pleased to share the findings of its CIHT FUTURES⁷ project that should provide more information and insight into issues such as uncertainty and forecasting.

CIHT would also encourage the Commission to look at the New Zealand Government's Future Demand project⁸ which explored the uncertainty of demand for personal travel by developing four future scenarios looking at the possible impact on travel. These scenarios set out a range of plausible futures that will help us make better investment decisions.

Technology enabled solutions are making it possible for customers to have greater visibility of the cost of transport choices, in this sense the market will drive this trend in response to customers' expectations.

Considering new and emerging technologies and disruptive trends

New technology offers passengers potential for much improved journey planning and ticketing options and can assist in promoting modal shift, increase patronage and contribute to seamless connectivity. For example, Transport for London now offer contactless payment and have stopped using cash on buses thereby promoting the speed by which passengers get onto buses. One recent innovation in transport, Mobility as a Service (MaaS) focuses on providing a single platform for combining all transportation options and presenting them to the customer in a simple and completely integrated manner – the emphasis being on how to

⁶ [Manual for Streets](#)

⁷ [CIHT FUTURES](#)

⁸ [New Zealand Future Demand Project](#)

get from A to B rather than the individual transport modes and services⁹, MaaS has the potential to help reduce congestion greatly.

The public sector should act as an enabler/facilitator for technology enabled innovation as the market will respond in ways that might not be envisaged. The public sector should provide leadership and a vision on the kind of place we are looking to achieve. The NIC could look at ways in which the public sector might realise this potential.

There are a large range of emerging technologies – from increasingly autonomous and electric vehicles to wireless power technology. Print on demand (3D) and use of drones are just some examples of what might have a disruptive influence on supply chains and logistics. These initiatives are being led largely by the private sector, again the NIC might want to look at what the public sector needs to do to help accelerate this.

The way in which technology changes behaviour and demand is one of the uncertain elements faced today – rather than trying to predict, the opportunity is to embrace uncertainty so trying to predict what technology will do is unlikely to be the right approach. If the question is turned around to say – What do the users of our transport networks need? Then there is the opportunity to map which factors affect and influence those needs. They can then be assessed;

- Which of those factors can be controlled and which cannot?
- Where can technology play a part in controlling those factors and who manages that technology?

That approach will give a much clearer route to which areas of technology to focus on. Alongside that approach there is then a need to accept that there will be changes that were not predicted and how are these managed?

The commission should also ensure that technology is tested from a security-minded perspective.

Door-to-door journeys

Any assessment must include the Local Road Network (LRN) and set out how the Strategic Road Network (SRN), rail, aviation and ports networks integrate with one another. Nearly all journeys begin and end on the local highway network and therefore must be considered in any evaluation of connectivity. It should not just focus on the requirements for new infrastructure but the need to use existing infrastructure more effectively.

Connectivity

Improved connectivity is vital to enabling growth. Clarity and certainty in terms of strategic planning (and the assessment process) will produce greater confidence amongst investors, business and housing (developers). Cities, towns, villages and rural communities all contribute to the success of the UK economy, increasingly so as the implications of the new digital economy challenge the traditional ‘agglomeration model’ The CIHT FUTURES¹⁰ project helps to set out the need to adopt a new approach to strategic planning, one that embraces a scenario based planning approach.

The weaknesses in connectivity is holding back much of the UKs regions in terms of jobs, enterprise creation, economic growth, and housing. It is therefore important that investment

⁹https://webcache.googleusercontent.com/search?q=cache:0f8pUphoQ44J:https://ts.catapult.org.uk/wp-content/uploads/2016/07/Mobility-as-a-Service_Exploring-the-Opportunity-for-MaaS-in-the-UK-

¹⁰ [Future Uncertainty in Transport – Understanding and Responding to an Evolving Society, CIHT 2015 - 16](#)



priorities in one area of the country are determined only having taken into account the relative benefit compared to investment made elsewhere.

Maintenance of existing assets, resilience, skills and funding

The Commission must not lose sight of the importance of maintaining existing infrastructure during the assessment

Maintenance and resilience of the existing asset, especially the Local Road Network, is too often overlooked with focus on the funding model for capital expenditure on highways maintenance given precedence. If existing assets are not adequately maintained then the entire network will not function correctly and will negate the benefits of capital investment in new infrastructure. It is vital to recognise that the highway maintenance service in local authorities is also dependent on revenue funding from Department for Communities and Local Government (DCLG) and other sources.

Revenue funding is subject to significant economic pressures that affect the ability of local authorities to deliver their highway services. A number of reports have highlighted the need to consider both revenue and capital funding together to ensure an effective and efficient service delivery (NAO¹¹, Transport Resilience Review¹²). Without considering the two elements together it is unclear how an effective and efficient service can be delivered.

Resilience - mitigate against disruption

Any assessment should review the resilience of the UKs infrastructure and move the consideration of resilience from events-driven reviews (Quarmby Review in 2010¹³ and the further review on the causes of vulnerability in 2014) to regular review and planning by asset owners themselves, as a fundamental part of maintaining an integrated transport network. CIHT has previously recommended a formal review and commitment for asset and infrastructure resilience assessment to be made a statutory requirement in its response to the Transport Resilience Review¹⁴ in 2014.

Resilience – invest to save

Resilient and reliable infrastructure is key to increasing confidence across the country and attracting private investment. Issues such as flood alleviation and asset maintenance are high profile across the country and highlight the need for funding certainty and commitment. Lack of both or this perception will stifle growth.

The Commission should ensure that Government takes an ‘invest to save’ approach as upfront investment will help reduce later costs from disruption. Such thinking should apply also to how transport networks support decarbonisation.

Skills – who will deliver infrastructure?

The Infrastructure Assessment requires a focus around the delivery of jobs and to address the skills shortage. This includes an understanding of who is responsible for tackling the shortage and how we are going to fill the jobs that will be required to deliver the proposed infrastructure. The development of skills is a key area of concern and one that should be carefully considered when considering delivery of the national needs. The recruitment, development and retention of the next generation is vital to deliver these ambitious plans. In a recent survey of CIHT’s

¹¹ [NAO report \(2014\) 'Maintaining strategic infrastructure: roads'](#)

¹² [Transport Resilience Review \(2014\)](#)

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<http://webarchive.nationalarchives.gov.uk/20111014014059/http://transportwinterresilience.independent.gov.uk/>

¹⁴ <http://www.ciht.org.uk/en/document-summary/index.cfm/docid/FE7FEF4E-E237-45F7-8C526F39F890E407>



Corporate Partners, 96% of respondents anticipated having a skills shortage in the next few years.¹⁵

CIHT has recently launched a suite of career materials and guidance as part of a programme to help the industry deal with the range of technical skills shortages. This includes a diversity and inclusion toolkit which provides practical guidance on data gathering, attracting and retaining a more diverse workforce and on changing culture and behaviour. It is the first toolkit of its kind for the highways and transportation sector and provides a route map to success through diversity and inclusion.

The National Infrastructure Plan for Skills¹⁶, published by Infrastructure UK, sets out concerns in major sectors like roads, rail and energy. The report found that through growth in infrastructure investment, there would be a demand for over 250,000 construction and over 150,000 engineering workers by 2020, with a shortfall of nearly 100,000 additional workers by the end of the decade. Programmes like HS2 and increased investment in roads will put further stress on the industry's capacity to deliver, the report found. It noted that demand is forecast to outstrip supply over the next five years in all English regions.

The NIC has the ability to establish the certainty that would help industry invest in skills and secure the pipeline of skilled engineers and professionals for the future. CIHT welcomed the Department for Transport Skills strategy¹⁷. It is now crucial that the government works with industry very quickly to ensure the skills, capacity (e.g. timetabling of scheduled works to enable the necessary skilled professionals to be available) and capability to deliver these infrastructure projects are available.

To further exacerbate the issue, all of the above studies into the shortage of skilled workers do not take into account the potential effect of Brexit. There has perhaps traditionally been a reliance on migrant labour from the EU. It is, however, difficult to comment on the effect leaving the EU will have on the skill pool as we are still waiting to hear the type of Brexit that will be delivered and how the subsequent negotiations with former trade partners will conclude. Migrant workers from the EU play a huge role in the construction/engineering industries and their loss would impact greatly. The Office of National Statistics figures state that nearly 12 per cent of the 2.1 million construction workers come from abroad.

Security – the Commission needs to ensure that a security-minded approach is embedded across all Infrastructure Delivery

The Infrastructure Assessment should ensure that security and resilience issues are fully considered. The NIC should focus on the security aspects of infrastructure provision in terms of physical and cyber security. This is important when it comes to the potential security implications of moves towards open data and BIM models. It is recommended that PAS 119-5 2015¹⁸ is strongly championed by the NIC to ensure such thinking is embedded within the infrastructure community.

Public and private sector roles

A significant amount of investment will be private sector led (a view that HMT has articulated in the National Infrastructure Plan) – so CIHT recommends the need to make sure that public sector takes ownership of the problems but enables the private sector to respond by being innovative with the solutions.

- Another potential solution is to move the road network to more of a utilities model: leading to more of a pay as you go i.e. road pricing approach.

¹⁵ [Routes to Diversity & Inclusion, CIHT 2015](#)

¹⁶ [The National Infrastructure Plan for Skills 2015](#)

¹⁷ [Department for Transport Skills Strategy 2016](#)

¹⁸ <http://bim-level2.org/en/standards/>



- Ensure the procurement process allows for flexibility and innovation in delivery approaches

Sector needs certainty

Certainty, and continuity of investment over a sustained period is important if overall improvements to the network are to be delivered effectively and efficiently. This need for certainty applies both to the Government, “client” bodies and the wider supply chain of organisations working in the sector.

Certainty of investment will allow progress to be made in terms of developing and delivering a truly co-ordinated transport system, one that allows networks to be more resilient to disruption – both planned and unplanned. Examples such as the recent flooding in parts of Cumbria, Lancashire and Yorkshire have only served to highlight the importance of the UK’s networks.

CIHT welcomed the establishment of Highways England and in particular to the greater longer term certainty of funding provided. This similar level of certainty exists for the rail network and would be useful to implement across the UK – through devolved administrations and on the local road network.

Alternative funding mechanisms

Use of a new roads fund: In 2015 we welcomed the announcement of the creation of a new road fund which provided certainty in funding for the strategic road network. CIHT believe that the UK Government must also begin to address the funding of our local roads which make up over 97% of the network.

Road Pricing: In 2012 CIHT supported a [report](#) by the [Institute for Fiscal Studies](#) (IFS) commissioned by the [RAC Foundation](#) that argues that there is a compelling case for road charging in the UK. CIHT believe that road pricing at both the national and local level has potential to deliver social, environmental and economic benefits including a dedicated funding stream for transport infrastructure improvements and maintenance. For CIHT, the potential benefits of road pricing include a means of managing road space, which on many of our urban and inter-urban roads is currently congested. Analysts report that the London congestion charge has been successful and is working well. Congestion is lower, journey times quicker, and more predictable, public transport more effective and business has survived without a significant impact. In fact, the scheme has been far more effective than expected, and has removed far more cars from the road than was planned¹⁹.

Workplace Parking Levy (WPL): Evidence from Nottingham reveals that their flagship city centre parking control scheme, ‘Workplace Parking Levy (WPL)’ has been highly successful at reducing car journeys significantly. WPL is a charge on employers who provide workplace parking, a type of congestion charging scheme. Nottingham City Council introduced this scheme to tackle problems associated with traffic congestion. Money raised from the WPL goes towards [NET Phase Two](#) (the extensions to the existing tram system), the redevelopment of Nottingham Rail Station and also supports the [Link bus network](#). Employers, rather than employees, are responsible for paying any WPL charge, although employers can choose to reclaim part or all of the cost of the WPL from their employees²⁰. The work in Nottingham has demonstrated the importance of integrating action to control car use with active provision of improvements to public transport to compensate and provide an effective alternative to the car.

Construction materials and equipment

¹⁹ http://www.nottingham.ac.uk/transportissues/cong_roadcharging.shtml

²⁰ <http://www.nottinghamcity.gov.uk/transport-parking-and-streets/parking-and-permits/workplace-parking-levy/>



Recent investment in infrastructure such as the £15bn allocated to Highways England for the strategic road network, HS2 and other large programmes of work such as Crossrail, will impact on the availability of materials, plant and equipment in the sector. A 2010 study by BIS estimated that 64% of building materials were imported from the EU. With Brexit, importers may now face duties or limits on quantities, which could lead to further shortages of construction materials or an increase in costs.²¹ Clarity is essential to provide the certainty required by the supply chain side of the sector, enabling them to invest in resource and capability to deliver the investment envisaged.

The environment

The commission's assessment must tackle sustainability and environment and is inadequate as currently stated. The NIC, in its assessment, needs to be more than reactive to climate change and recognise that infrastructure and everything that comes with it, is one of the drivers of climate change, and therefore we should be pro-active as well as reactive. Under the current remit it might conclude that the transport systems connecting to a coal fired power station should be resistant to flooding, without questioning having a power station that uses this type of fuel in the first place. Its role is meant to be a long term, evolving assessment. Large infrastructure projects / schemes usually have ramifications for the natural environment and as a result CIHT would like the commission to ensure that the programme works to meet agreed UK emissions targets.

High value transport investments

CIHT would recommend that the following process should be followed to prioritise an approach to investment:

- Identify the different classes of groups (customers) who are reliant on the network. As well as different users of the network, these customer groups could include amongst others, adjacent communities, non-users of the network, the environment, heritage and the highway asset itself.
- Identify the different purposes that the network is required to deliver to different customer groups.
- Analysis to confirm how the network will best meet the different purposes identified and to identify what investment is required to meet those different purposes of all customers.
- Confirm the wider benefits that will arise from meeting the needs of all customer groups and thereby define the Value for Money of the investment.
- Identify areas where investment in other modes will better meet the needs of customers and identify the parties best able to deliver that investment.

When considering high value transport investments the NIC must include investment to improve connectivity, resilience, maintenance and higher funding in local roads which are an essential part of the overall infrastructure networks. The NIC must recognise the value of the existing asset which includes the local road network, estimated in the government's Action for Roads²² command paper to be worth £400bn. Resilience and maintenance of the existing, not just new infrastructure needs to be evaluated when considering the highest value transport investments which will allow people, freight and connecting places into and out of major urban areas.

Tackling congestion

²¹ [What does Brexit mean for construction?](#)

²² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212590/action-for-roads.pdf



The UK's largest cities and towns are where the most significant economic activity takes place, where jobs are created and where businesses can thrive. Roads are vital to the transport networks in towns and cities. A recent report by data company Inrix suggested that British roads are the most congested in Europe, drawing upon a recent study, Inrix monitored traffic on every road in 123 cities, including London, Cardiff, Paris and Hamburg and found more than 20,300 so-called "traffic hotspots" in UK cities - well over double the number in Germany and twice that of France²³. The Centre for Economics and Business Research and Inrix, identified that the cost of congestion to the London economy was \$8.5bn in 2013, and would rise to \$14.5bn in 2030. They estimated that the cumulative cost over that period would be more than \$200bn²⁴.

In addition to the cost of congestion outlined above, it is important that the government recognises that highways and transport networks have two key functions; that of providing for the **movement** of people and goods and a contribution to the **place** in which they sit. Movement has been the focus of government and the sector but place is of great importance when considering accessibility and wider societal issues (including community and stakeholder engagement).

Conclusion

The strategy for transport and its associated infrastructure should be integrated both operationally and financially. The strategy should include the strategic and local road networks, rail, aviation and ports, setting out how those networks integrate with one another. Highest value transport investments should recognise that connectivity across all regions is essential to support and attract businesses and skilled workers. Investment should also recognise the value of improved environment, health and wellbeing, establishing a clear collaboration between policy areas ensuring inclusive, accessible environments for all users.

ANNEX A

²³ <http://www.bbc.co.uk/news/uk-38149577>

²⁴ <https://www.ft.com/content/a50158ee-52de-11e4-a236-00144feab7de>



South West

National Infrastructure Commission Call for Evidence – National Infrastructure Assessment. High Value Infrastructure Investments in Cities and Regions.

Information from CIHT **South West Committee** to inform CIHT's response 8 February 2017

The South West Region covers a large area with wide ranging infrastructure needs reflecting the diversity of its functional economic areas (covering five Local Enterprise Partnerships) and a mixture of cities, urban centres, towns, villages and deep rural areas. The northern part of the region is as far away from the southern part of the region as it is from Scotland.

Key strategic economic issues are the need to reduce the peripherality of the far south west by reducing journey times to London and the Midlands and improving access to national gateways such as ports and airports; the need to improve resilience of transport networks as much of the region has been cut-off in extreme weather events; the need to improve connectivity between growth centres in the region; and the need for urban transport systems to facilitate intense growth pressures in the city regions.

The key growth hubs in the region require infrastructure investment to accommodate planned growth and development, given a significant funding gap between what development can afford (viability challenges) and the infrastructure needed to ensure transport networks continue to function effectively in the future. Infrastructure improvements are needed on the local highway, bus, walking and cycling networks in our main towns.

New rail stations are required at a number of locations across the Region linked to localised growth and development proposals. These needs are covered in detail within individual responses from local authorities and LEP's across the Region.

South West Peninsula

The South West Peninsula covers a wide area covering Cornwall & Isles of Scilly, Devon, Somerset & Torbay; and the cities of Plymouth & Exeter. The Peninsula generally experiences lower levels of productivity than the UK average, with a key issue being peripherality, and consequently the distance between businesses and their markets. Research shows that there is a clear relationship between productivity levels and travel time from London, with a 6% productivity gap per 100 minutes' travel time. Approximate travel times to London by road vary from just under 3 hours to 4 hours.

Two of the highest value investment programmes supporting growth in the South West Peninsula are the A303/A358/A30 corridor improvement programme and the Peninsula Rail Task Force 20 year improvement strategy.

An economic assessment (<http://www.somerset.gov.uk/policies-and-plans/schemes-and-initiatives/a30-a303-a358-improvement-project/>) demonstrates that an end-to-end improvement of the A303/A358 to dual carriageway and smaller scale improvements on the A30 to Exeter would deliver 21,000 jobs and £41.6bn GVA increase through improved productivity of existing businesses; £21.2bn of taxation, welfare savings, disposable income and tourism benefits; and £1.9bn transport benefits. It is essential that Government allocates sufficient funds in the next road investment strategy to honour a commitment (<https://www.gov.uk/government/publications/a303-a358-and-a30-corridor-feasibility-study-technical-report>) to complete the end-to-end improvements despite recent cost increases.



The full economic potential of the corridor improvements will only be realised if the whole corridor is improved.

The 20 year rail strategy (<https://peninsularailtaskforce.co.uk/closing-the-gap-the-south-west-peninsula-strategic-rail-blueprint/>) proposes a long-term programme of investment in rail links between London and the South West which would unlock a host of benefits, generating an additional £7.2bn of GVA and £1.8bn of transport benefits. The strategy also suggests productivity benefits from simple improvements such as high quality/ uninterrupted wifi connectivity enabling productive use of the travel time. Both improvement programmes also tackle an inherent lack of resilience in the south west transport networks which are increasingly vulnerable to extreme weather events.

Other key road infrastructure improvements required to support growth and productivity in the South West Peninsula are

- M5 Corridor particularly at junctions which are the gateways to planned growth areas;
- A361 North Devon link road;
- A38 Devon Expressway (and inclusion of Plymouth on the Strategic National Corridor network);
- A30/A38 strategic road corridors in Cornwall need to be completed to national trunk road standard including dualling of the A30 Temple to Higher Carblake, dualling of the A30 Carland Cross to Chiverton and capacity improvements to key A30 junctions.

Airports are a vital link between the Isles of Scilly, Cornwall and the rest of the UK and beyond. Newquay Cornwall Airport is a vital link to London; major companies have identified air links as a key component in their decision making process for doing business. Without resilient air links to the Isles of Scilly there will be continued decline in visitors to the islands and to the quality of life and access to essential services by islanders. Improved air connections required are:

- International air connections: support to secure long term access to a London or other international hub airport e.g. Gatwick, Heathrow, Amsterdam.
- Regional Aircraft: Ensure continued accessibility of regional (turbo-prop) aircraft into hub and major airports.

Further investment in Penzance and St Mary's harbour is required to improve the resilience of the links to the Isles of Scilly

The Northern part of the Region - West of England 'City Region' & Gloucestershire

The West of England covers the four unitary authorities of Bath and North East Somerset, Bristol City, North Somerset and South Gloucestershire. Centred around the cities of Bristol and Bath, the West of England City Region typically has stronger economic performance and strong productivity, high-value employment and associated skills base.

The West of England faces a huge congestion challenge with no resilience, which poses a significant threat to productivity and an increasing threat to air quality. Infrastructure provision increasingly needs to focus on modal change away from car dependency and supporting public transport and low carbon transport.

Investment in the rail network in the West of England is needed to deliver a considerable change in travel behaviour, provide a focus for urban redevelopment around existing and new stations and be better linked to other modes to provide a truly multi-modal transport network. The West of England rail network also serves as strategic cross roads for rail at a national level.



The planning and delivery of new and improved rail infrastructure is complex and it is difficult to link to financial beneficiaries in order to generate private sector contributions to new schemes. In order to overcome this, the NIC could consider how the funding and delivery of local rail schemes can be developed to create an equal risk and reward framework to encourage more third party investment in the rail network.

Improvements to the A38 corridor linking the M5 with Bristol Airport and improved transit linkages between the airport and Bristol would enable the airport to meet its full potential as an economic growth hub and international gateway.

Key strategic infrastructure needs in Gloucestershire are:

- A417 'missing link' to complete the A417/419 strategic route linking the M4 and Swindon with Gloucester (see below).
- M5 Junction 10 – Upgrading to an all-movement junction to remove current access limitations and enable major development planned in north west Cheltenham.
- M5 Junction 9 Ashchurch/ A46 corridor.
- A40 corridor linking Cheltenham and Gloucester / Forest of Dean.

The Eastern part of the Region – Swindon & Wiltshire, Dorset, Bournemouth & Poole.

The eastern end of the region covers Swindon, Wiltshire, Bournemouth, Poole and Dorset with stronger functional relationships with the South East and the South Midlands.

There is significant investment (£2.8 billion) underway in the Great Western Mainline, with the electrification of the line between London Paddington and Cardiff via Swindon and Bristol Parkway, and the associated introduction of the IEP trains from 2018. These investments will improve rail links between Swindon and North Wiltshire and London, reducing journey times to 45 minutes, but the Government decision to defer investment in the electrification of the railway line into Bath and Bristol Temple Meads will mean that the full benefit of this investment will not be realised. The completion of the full electrification project is therefore a priority for the region.

On the Strategic Road Network, it is essential for the economy of the South West, and especially that of Gloucestershire and Swindon, that the current studies into the dualling of the A417 "missing link" South of Cheltenham is translated into action through the delivery of this scheme as part of Highways England's RIS2 programme. This will particularly boost the motor manufacturing sector at Swindon, and will improve strategic connectivity between the West Midlands, the South West and the South East.

Looking eastwards, the Government commitment to investment in the East – West Rail project linking Oxford and Cambridge, and in the parallel Oxford to Cambridge Expressway, is welcomed, but opportunities to maximise the benefits on this investment should not be overlooked. Specifically, these include the potential to operate rail services between the West of England and Oxford, Milton Keynes and Cambridge utilising the new railway line. This would connect Bristol, Bath, Chippenham and Swindon with destinations in the South Midlands and East Anglia without the need to travel into London and change trains there, thereby freeing up capacity on the Great Western Line. These rail services would also help facilitate new rail stations at Corsham (where there is a cluster of high-tech businesses centred around the significant digital infrastructure investment related to the Global Communications Centre at MOD Corsham) and Royal Wootton Bassett (which is near to the Defence School of Electronic and Mechanical Engineering at Lyneham) in Wiltshire.

Similarly, connectivity between Swindon and Oxford (and the M4 and the Oxford – Cambridge Expressway) would be greatly improved through the dualling of the A420 route



connecting the two. This has specific benefits for the economies of both Swindon and Oxford, with manufacturing industry such as BMW having bases in both communities. The improvement of the A420 would also provide congestion relief for the M4 into London and the A34 South of Oxford, freeing up capacity on these routes for their core roles of providing strategic connectivity to the South East and the South Coast ports respectively.

Therefore, the next generation of NIC work needs to examine the potential for strengthening the strategic connectivity between Swindon, North Wiltshire and the West of England (acting as a gateway to the South West) and Oxford.

Connectivity is also poor on the north – south axis within the ‘Wessex’ area that covers Dorset and the coastal ports in the south, the whole of Wiltshire, Bath and the intersection with the M4 corridor to the north. Wider economic benefits are being foregone due to this poor connectivity: the A46 / A36 corridor is constrained by having to pass through parts of Bath city centre; there are bottlenecks and capacity restrictions on the A350; and the rail corridor from Southampton through Wiltshire and on towards Bath, Bristol and Swindon has relatively long journey times.

Better connectivity will help close current ‘productivity gaps’ in the area. Improved north-south connectivity will also benefit long-distance traffic, especially commercial vehicle movements, from the Midlands into the area and on to the south coast. Other economic benefits will be the ‘unlocking’ of much needed new developments, especially new housing sites at strategic locations.

In recognition of the above issues, Wiltshire Council, Dorset County Council and Bath and North East Somerset Council have commissioned a ‘Wessex: North to South Connectivity (included with Wiltshire Council’s separate submission). This study effectively forms an initial evidence piece to better enable Highways England to consider including options for improvements that could be taken forward as part of its RIS2 process. The NIC should help support this work as part of its National Infrastructure Assessment process.

Strategic road and rail infrastructure requirements that are critical to economic growth in Dorset, Poole and Bournemouth include:

- A31 between Ashley Heath and M27 (Southampton).
- Major improvements to North-South route(s) accessing the M4 via A350.
- Improvements to the A37 (in conjunction with A303/A358 improvements) to provide far better access to M5 from Dorset via Yeovil/Taunton.
- Major new link road between Poole and A31, unlocking several thousand new homes.
- Further dualling of A35 at key locations to ease significant congestion on East-West journeys across the sub-region.:
- Faster rail journey times between Bournemouth, Poole, Weymouth & London through significant track and signalling upgrades.
- Improved rail routes via Weymouth to Exeter, Taunton, Bristol, Swindon, Salisbury – Yeovil South Chord proposal is key.
- Weymouth to London via Yeovil. Re-doubling of track between Wool and Morton. Power supply capacity improvements.
- ‘Dorset Metro’ – new and frequent cross-conurbation commuter train services, including new branch lines to Wimborne and Ferndown and potential for link to proposed Solent Metro.